

PRASAR BHARATI
(BROADCASTING CORPORATION OF INDIA)
DIRECTORATE GENERAL: ALL INDIA RADIO
(P&D UNIT)

Technical Specification for Sync (Clock) Generator

1. GENERAL

1.1 This specification is for Sync (Clock) Generator to be used in the studios of various stations of All India Radio through out India. The equipment shall be fully digital in design and based on the field-proven modern technology. It should be rugged in construction and suitable for reliable operation 24 hours a day and 365 days in a year.

Only professional and branded products manufactured by reputed companies in sound broadcasting equipment field shall be offered.

1.2 The tenderer must submit the following documents along with the tender:

(a) A point-to-point compliance statement as per Annexure-I highlighting deviations, if any, on all the clauses of specification from the manufacturer of the offered equipment duly signed in original. Actual performance figures should be quoted under remarks column. If compliance statement is in format other than Annexure-I, the tender will be rejected out rightly.

(b) Detailed printed literature of the equipment giving complete electrical and mechanical data including detailed dimensions and mounting requirements.

(c) The quote should either be from the original manufacturer or from their authorized representative/dealer. In case, the quote is from the authorized representative/dealer, a certificate in original from the original manufacturer that the tenderer is authorized representative/dealer for India should be enclosed with the tender. In case, the quote is from both i.e. Authorised representative/dealer and also from original manufacturer, the quotation from original manufacturer will be considered for technical evaluation.

1.3 The tenderer may be required to demonstrate the functioning of the tendered unit during technical evaluation, including verification of electrical performance parameters as may be required during technical evaluation, in New Delhi. Non-compliance of equipment demonstration, if asked for by the indenter, shall disqualify the tender.

1.4 Incomplete offers will be rejected out rightly.

2. SCOPE OF THE TENDER

The specification is for supply of Sync (Clock) Generator along with all accessories, mating connectors and cables, etc. required to be fully functional.

3. TECHNICAL SPECIFICATION

3.1 General Features

- 3.1.1 The Sync (Clock) Generator should be simple in operation.
- 3.1.2 The Sync Generator should be compact ergonomically designed professional product and suitable for reliable operation on 24x7x365 basis working. It should be housed in rust-proof pre-painted metal cabinet of 19-inch rack mountable unit.
- 3.1.3 The layout of parts / components in the generator should be professional to permit easy access to the wiring, inspection, repairs / servicing if required.
- 3.1.4 The Sync generator should be capable to generate Master Sync with precision and also distribute it to all around studio equipment for synchronization.
- 3.1.5 The Generator section of the Sync generator should have facility to get synchronizes with external word clock or AES/EBU signal with automatic switch over.
- 3.1.6 The sync generator should have facility of generating internal high precision reference clock (Sync) with automatic and manual switchover in case of external clock (Sync) failure.
- 3.1.7 The Distributor section of Sync generator should be capable to accept and distribute the incoming AES/EBU digital audio input also.
- 3.1.8 The distributor section should be able to distribute one word clock signal to at least six outputs, and two different external (sync) clock or AES/EBU signal to at least 8 outputs (4 outputs for each inputs).
- 3.1.9 The distributor section of the sync generator should have capability to distribute an AES/EBU frame clock also.
- 3.1.10 All the balanced digital inputs & outputs in the sync generator should be available in XLR or 15 pin DIN connectors with break out panel for XLR.
- 3.1.11 All Connected ports on the Sync Generator should be provided with status indication and error indication if any like clock lock and data validity.
- 3.1.12 The Sync Generator should have facility to work with computer based Studio / News Room automation systems.
- 3.1.13 The Sync Generator should be able to accept Digital Audio Signal at the external Sync /AES EBU input of sample rates from 30 kHz to 96 kHz and should display standard sample rates of 32, 44.1, 48, 88.2, 96 kHz.
- 3.1.14 The Sync Generator should be sleek 1U/2U size and 19" rack mountable.

3.2 Sync (Clock) Generator

- 3.2.1 Internal Clock (Sync) 44.1, 48, 88.2, 96, 176.4, 192 kHz selectable
with Accuracy of +/- 1 ppm
- 3.2.2 External Clock Sync By Word Clock or external AES/EBU, for input signals
42.....50, 84.....100, 168.....200 kHz

3.3 Distributors Input Configuration

3.3.1 External Sync (clock) or AES / EBU

No. of Inputs:	Minimum 2
Sensitivity:	200mVp-p
Impedance:	110 ohms
Sample Rates for external AES/EBU digital signal:	30 kHz to 200 kHz, As per AES3 1992

3.3.2 Word Clock

Input:	1
Impedance:	Hi Impedance or 75 Ohm
Sensitivity:	1Vp-p

3.3 Distributor Output Configuration

3.3.1 External Sync (clock) or AES / EBU

No. of outputs	8 (Minimum 4 for each input)
Connectors:	XLR or 15 Pin Din with Break out panel for XLR
Impedances:	110-ohms
Levels:	5 Vp-p loaded at 110-ohms
Sample Rates for external AES/EBU digital signal:	30 kHz to 200 kHz As per AES3 1992

3.3.2 Word Clock

Output	Minimum 6
Impedance	75 Ohm

3.5 Power Supply 230V \pm 10%, 50 Hz \pm 6% single phase A.C. Supply.

3.6 Weight 5 kg. or less

3.7 Climatic Conditions

The Sync (Clock) generators will generally be installed in air-conditioned environment. However, it should perform satisfactorily in the dry temperature range of 5°C to 40°C and humid conditions prevailing in tropical climate. A test certificate in this regard should be produced from an approved Test House.

3.7 Accessories

3.7.1 Each Sync Generator shall be supplied with following accessories / items and their cost shall be included in quotation:

(A) Complete set of XLR or 15 pin Din with XLR Break out panel connectors (Inputs & outputs) if required and power chord etc.

(B) A set of operation manual and service manual.

3.7.2 Any other item, including interconnecting cables and related configuration software/firmware (Pre loaded and also on Media CD/DVD) for making the Sync (Clock) Generator fully functional.

4. GUARANTEE / WARRANTY

The equipment shall be guaranteed for trouble free operation for a minimum period of one year from the date of supply. Replacement / servicing shall be effected free of cost for hardware and software during the guarantee period.

5. PRE-DISPATCH INSPECTION

Pre-dispatch inspection would comprise complete testing of the Sync Generator to be supplied including functional tests and various measurements at manufacturer's premises before shipment by authorized representatives of All India Radio. The Acceptance Test Procedure (ATP) shall be prepared by the tenderer and got approved from the indenter after the firm order is placed. The testing shall include:

- (a) Physical test.
- (b) Functional tests.
- (c) Performance tests.

The tenderer will give a notice in writing to the indenter at least 12 weeks before the commencement of factory inspection. The tenderer shall provide all equipment, materials and manpower as may be required for performing various tests as per ATP.

In case of imported equipment, the expenses on air travel, accommodation and daily allowances for AIR's inspecting officers would be borne by All India Radio.

6. SPARES

The Essential required spares may be recommended and shall be quoted separately. The list should include name and part no. of the parts/ components with quantity and its unit cost. The tenderer shall ensure availability of spares in India for the quoted equipment for a period of at least 5 years from the date of supply of last equipment to AIR. The cost for software/firmware upgrades, if any, shall also be quoted as an option.

